MATH 190
Calculus I

Course description: Functions, limits, continuity, derivatives with applications, antiderivatives. This course has been identified as a general education course.

Prerequisites: MATH 170 and MATH 175, or permission of department head.

Text: *Essential Calculus* by James Stewart, Thomson/Brooks/Cole.

Calculator: The *Casio 9750G Plus* will be used for classroom demonstrations. It is recommended that you check with the instructor before using a calculator other than the *Casio 9750G Plus* for this class. Some testing will be conducted without the use of the calculator.

For details about **your** instructor's contact information, office hours, and policies, go to http://www.faculty.mcneese.edu/ and access your instructor's website.

General Education Competency

The General Education Competency assessed in this course:

- To understand numerical data and statistics
- To reason abstractly and think critically

Student Learning Outcomes

The student will be able to:
- demonstrate computational skills necessary for problem solving and mathematical modeling;
- create, interpret, and revise models to solve problems;
- collect, organize, and interpret numerical data in various forms;
- analyze information given in order to draw conclusions and solve problems;
- demonstrate knowledge and skills specific to course content as outlined in the objectives listed below.

Objectives

The student will be able to
- demonstrate an understanding of limits and limit properties and use these properties to evaluate limits of functions algebraically and graphically;
- understand the concept of continuity of a function and its importance n the study of differential calculus;
- explore the concept of rate of change: how a dependent quantity changes with respect to a corresponding change in an independent quantity;

- apply the rate of change concept to formulate the definition of the derivative of a function;
- demonstrate appropriate skills in applying the derivative rules in finding the derivative of a function (this includes the product, quotient and chain rule);
- demonstrate knowledge of derivatives of a broad class of functions including exponential, logarithmic, inverse trigonometric and hyperbolic functions;
- demonstrate an understanding of the Mean Value Theorem;
- be able to recognize indeterminate forms and use L'Hospital's Rule to compute limits;
- demonstrate an understanding of the derivative of a function by using the derivative as an aid in curve sketching, as well as in optimization and related rates of change problems.

Course material

Course material will include the following topics:

TOPIC	CHPT.	SECTIONS	APPROX. TIME
Limits, continuity, limits involving infinity	Ch. 1	3–6	~ 3 week
Derivatives, differentiation rules, chain rule, implicit differentiation, related rates	Ch. 2	1–8	~ 4 weeks
Exponential, logarithmic, and inverse functions, hyperbolic functions, indeterminate forms and L'Hospital's Rule	Ch. 3	1–7	~ 4 weeks
Maximum/minimum values, Mean Value Theorem, curve sketching, optimization problems, Newton's method, antiderivatives	Ch. 4	1–7	~ 3 weeks

Other references: *Calculus* by Schaums; *3000 Solved Problems in Calculus* by Schaums; *Calculus* by HBJ College Outline.

Assessment

The Semester score for the course will be calculated by using the weights (%) indicated below:

WEIGHT (%)

75%	Semester average	Tests	_____ %
		Assignments	_____ %
		_____	_____ %
25%	Final exam grade		

The Semester letter grade in the course will be assigned according to the scale below:

SEMESTER GRADE	SEMESTER SCORE
90–100	A
80–89	B
70–79	C
60–69	D

0–59	F

Notes:

1. In cases of an **excused** absence, the instructor reserves the right to reweight the final exam in lieu of a make-up test.
2. In the case where a student's score on his final exam indicates **exceptional achievement** above and beyond that indicated by the semester average, the instructor reserves the right to reweight the value of the final exam in computing the semester grade.
3. The final will be a constructed according to guidelines established by the department.

Please read the Department's Attendance Policy.

Instructor's office hours can be found on the MSU web site at
    http://www.faculty.mcneese.edu/
Click on individual instructor to view their web page. Or navigate from MSU Home Page; select *Faculty & Staff*, select *Faculty Web Server*.

Students should visit the MSU web page at
    http://www.mcneese.edu/policy/diversity.htm
for information about diversity awareness and sexual harassment policies and procedures, as well as the Americans with Disabilities Act.

Students should also visit the MSU web page at
    http://www.mcneese.edu/integrity
for information on the Academic Integrity Policy.

ANY STUDENT WITH A DISABILITY IS ENCOURAGED TO CONTACT THE OFFICE OF SERVICES FOR STUDENTS WITH DISABILITIES IN DREW HALL, ROOM 200, VOICE (337) 475-5916, HEARING IMPAIRED (337) 475-5722. IT IS EACH STUDENT'S RESPONSIBILITY TO REGISTER WITH THE OFFICE OF SERVICES FOR STUDENTS WITH DISABILITIES WHEN REQUESTING A REASONABLE ACCOMMODATION.

One week of summer school is equivalent to 2 ½ weeks of Fall or Spring classes

DMCS
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